Math Block
Module 1

Canyons School District

Evidence-Based Learning Department

Canyons School District Academic Framework to Support Continuous Improvement

RtI: Multi-Tiered System of Supports for Academics and Behavior

RtI	(1) providing high quality core instruction (and intervention) matched to students' needs	(2) using data over time (i.e. rate of learning, level of performance, fidelity of implementation)	(3) to make important educational decisions.
	• ALL CSD students and (cators are part of ONE p tive educational system. • Evidence-based instruc and interventions are ali d with rigorous content standa	• Data are used to guide instructional decisions, align curriculum horizontally and vertically, and allocate resources. • CSD educators use instructionally relevant assessments that are reliable and valid.	• CSD educators problem solve collaboratively to meet student needs.
	• Quality professional dev pment supports effective ruction for ALL students. • Leadership at all levels tal.		

Co pectations for ALL stude the General Education Classrooms and Common Areas

Curriculum (rds and Materials)	Evidence-Based Instructional Priorities	Time Allocation	Data Collection and Use	Fidelity of Implementation	Data-based Decision Making
deas, bodies of vledge ent standards and ctations aligned with Utah Core Standards d-Class Instructional gn and Assessment A) olwide Positive avioral Interventions Supports itized Curriculum s and Scientific, arch-based rams onal Educational nology Standards TS)	• Explicit instruction (I, We, Ya'll, You) • Maximizing opportunities to respond • Feedback • Vocabulary • Differentiated instruction & grouping structures • Acquisition, automaticity, then application • Classroom Positive Behavioral Interventions and Supports	• Daily maximization of instructional time • English Language Development (ELD) time • Building Leadership Team (BLT) meetings • Protected time for grade level and/or department team learning & planning • Establish rules, routines, and arrangements to increase efficiency for adults and students • Working smarter, not harder	• Consistent evaluation of Core instruction • Districtwide screening of key academic and behavior skills • Benchmark assessments • Progress monitoring • Formative assessment practices (CFAs) • Summative assessment practices • Early warning system for identification of risk (academic, social, and performance) • Timely and consistent review of relevant data	• Monitoring and evaluating effectiveness of implementation using formalized protocols (e.g. Walk-Throughs, fidelity checks) • Instructional and Peer Coaching supports • Products to demonstrate evidence of implementation	Use problem solving protocol to: • Evaluate the effectiveness of Core/ Initial instruction (>80% proficiency) for all subgroups and maintain or adjust • Analyze trends to inform decisions • Evaluate and adjust CSIP • Determine needs for supplemental instruction

Rationale

* Why would we change?
* What is the purpose of an updated math block?
* What might a math block include?
* What will I need more training on to do?

CSD Math Block 90 Minutes Daily

Math Practices

- ✓ Provide realistic problems and real-world contexts
- ✓ Create Language-rich classroom routines
- ✓ Incorporate high-order thinking through questioning
- ✓ Increase the use of measurement
- ✓ Build from graphs, charts, and tables – Milk the data
- ✓ Develop number sense at every opportunity
- ✓ Have students visualize, draw, and model concepts
- ✓ Increase opportunities to respond and feedback

Numeracy Component	Range of Time	Focus of Instruction	Instructional Materials
Review or Preteach	10-25 minutes	• **Review** • Pre-teach upcoming concepts	• Problem of the Day • Daily Spiral Review
Vocabulary and Fluency Practice	5-10 minutes	• Teach Appropriate **Vocabulary** • Build **Fluency** with math facts and computation	• Vocabulary Word Cards • Computation Fluency Masters
Concept/Skill Development and Application	30-45 minutes	**Develop the Concept:** Concrete: Hands-on Representational: Visual Abstract: Symbolic	• Interactive Learning • Visual Learning Bridge • Guided Practice
Independent Practice and/or Small Group: Reteach or Extend	15-20 minutes	• Students **practice concept** independently as appropriate • Reteach with small groups of students who need extra support/scaffolding • Provide extension opportunities based on that concept/skill for students who have shown mastery of the concept/skill	• Problems from Independent Practice and Problem Solving • Practice, Reteach, and Enrichment pages • Differentiated Center materials • Math Diagnosis and Intervention System
Assessment	Time Varies	• **Monitor progress** towards mastery of grade-level core standards	• **Teacher Observation** • Independent Assignments • District and School CFAs • Topic Tests • Progress Monitoring

(**Bolded** items should be part of a daily math lesson.)

Review or Preteach

* Daily for 10-25 minutes
* Interactive Review
  * use a quick pace, teacher directed, monitor understanding
  * scaffold for struggling learners
  * review all concepts periodically
  * focus on Number Sense
  * use context

Review or Preteach

* Preteach
  * Give a quick preview of an upcoming concept
  * Teacher model
  * Think Aloud

Vocabulary and Fluency Practice

Vocabulary Practice

* 3-5 minutes

* Explicitly teach new vocabulary words

New vocabulary for a topic in 4th grade

New Vocabulary			
point	right angle	triangle	acute triangle
line	acute angle	quadrilateral	obtuse triangle
plane	obtuse angle	pentagon	parallelogram
parallel lines	straight angle	hexagon	rectangle
intersecting lines	degree	octagon	square
perpendicular lines	protractor	equilateral triangle	rhombus
line segment	polygon	isosceles triangle	trapezoid
ray	side	scalene triangle	
angle	vertex	right triangle	

**It's so many!! Start teaching these earlier in the year so students are ready for them.

Vocabulary Routine

* **Introduce the word**
  * Teacher says the word and posts the word
  * All students repeat the word
  * Teacher gives a child-friendly definition
  * All students repeat the definition (with teacher guidance)
  * Repeat above steps as necessary
* **Demonstrate**
  * Provide an example
  * Provide a non-example
  * Repeat above steps as necessary
* **Apply**
  * Students turn to a partner and use the word in a sentence
  * Teacher shares a sentence using the word

Vocabulary and Fluency Practice

Vocabulary Practice

* Review previous words
  * Preview upcoming vocabulary
  * Use vocabulary word cards from the district website
* Utilize the resources on Granite School District's site

Vocabulary and Fluency Practice

Fluency Practice

* 3-5 minutes
* Strategy practice

  Ex: Adding 8 is adding 10 and taking away 2

  Doubles facts, doubles plus 1

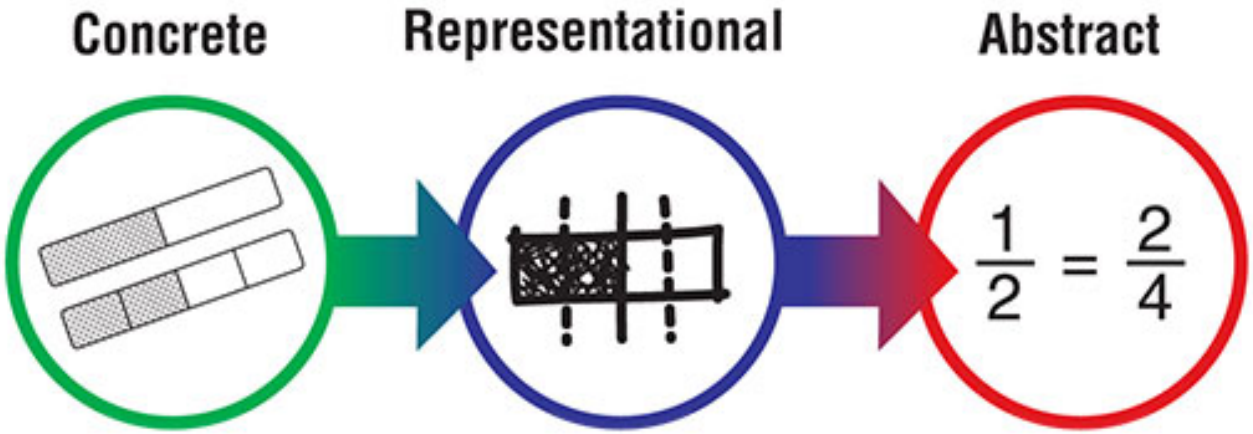
  Multiplication: Add one more set

  (8 x 5 = 40 so 8 x 6 is one more set of 8.)

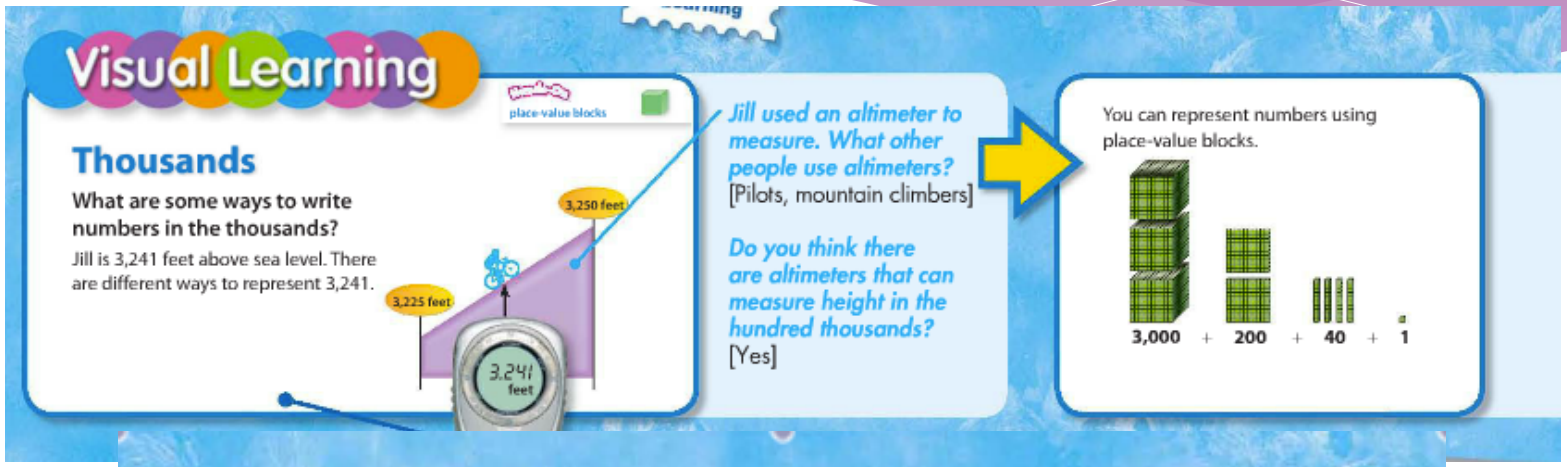
* Flashcards, games, activities, partner practice

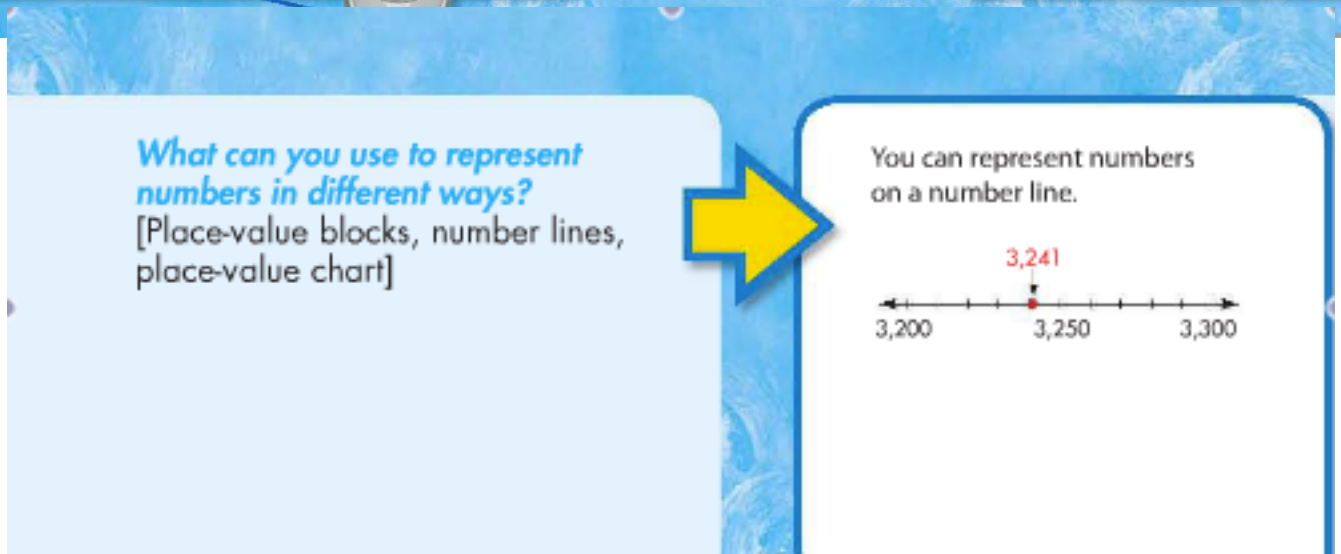
Concept/Skill Development and Application

* 30-45 minutes
* Use the C-R-A model
* Choose a variety of approaches from enVisionMath (video clips, guided learning, problem based interactive learning… Mix it up!)



Visual Bridge





Why C-R-A?

" The purpose of teaching through a concrete-to-representational-to-abstract sequence of instruction is to ensure students develop a tangible understanding of the math concepts/skills they learn."

* http://www.specialconnections.ku.edu/~kucrl/cgi-bin/drupal/?q=instruction/mathematics/teacher_tools

C-R-A

* Modeling the concept and providing lots of opportunities for practice is important at all 3 levels.

I do, we do, y'all do, you do

Independent Practice

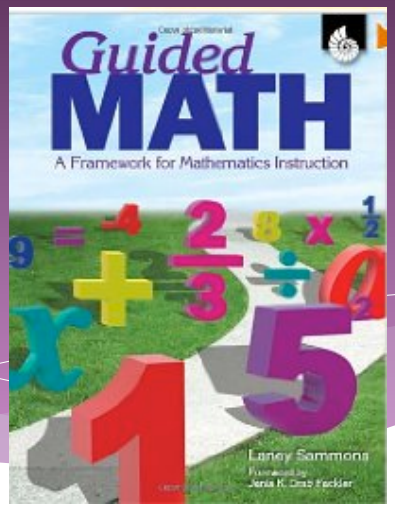
* 15-20 minutes
* When the teacher has determined that at least 80% of the students are ready for independent practice, give the assignment
* Teacher works with small groups of students who are not at the independent stage or who need extra support/ scaffolding

Assessment

* Continually monitor progress
  * Teacher Observation
  * Independent assignments
  * District and school CFAs
  * Topic Tests
  * Progress Monitoring

* Checklists would also be useful to assess student's mastery

Skill-Based Math



Skill-based Groups

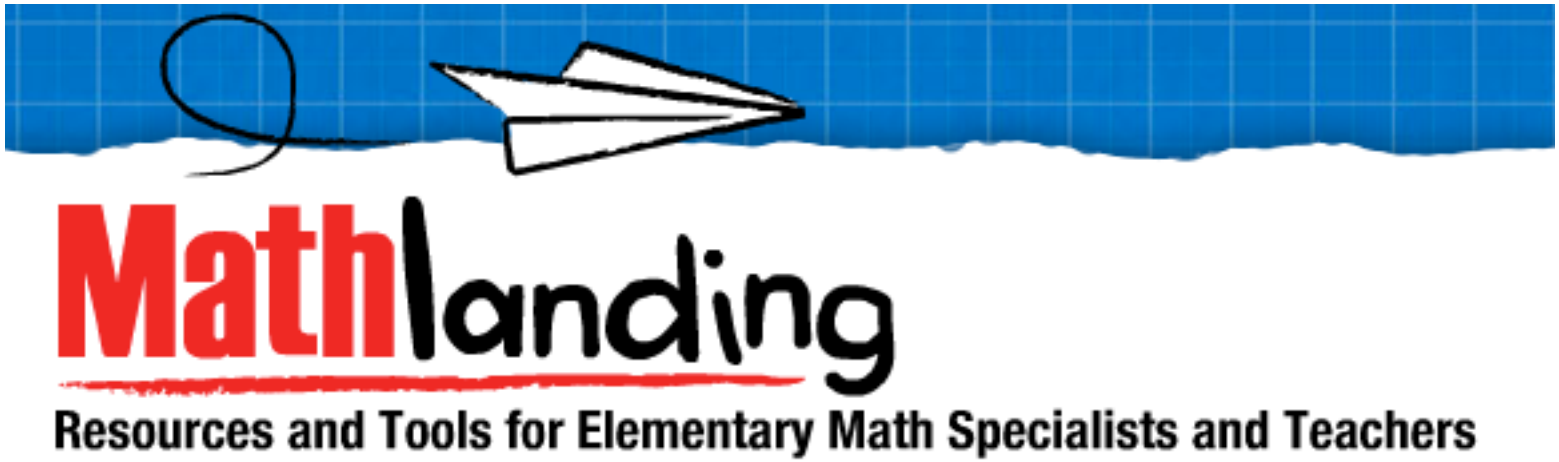
* Key Ideas
* What it looks like?
* How to set it up?

Rest of Class

* Key Ideas
* What are they doing?
* Example Tasks

Math Landing

* www.mathlanding.org



CCSS Math

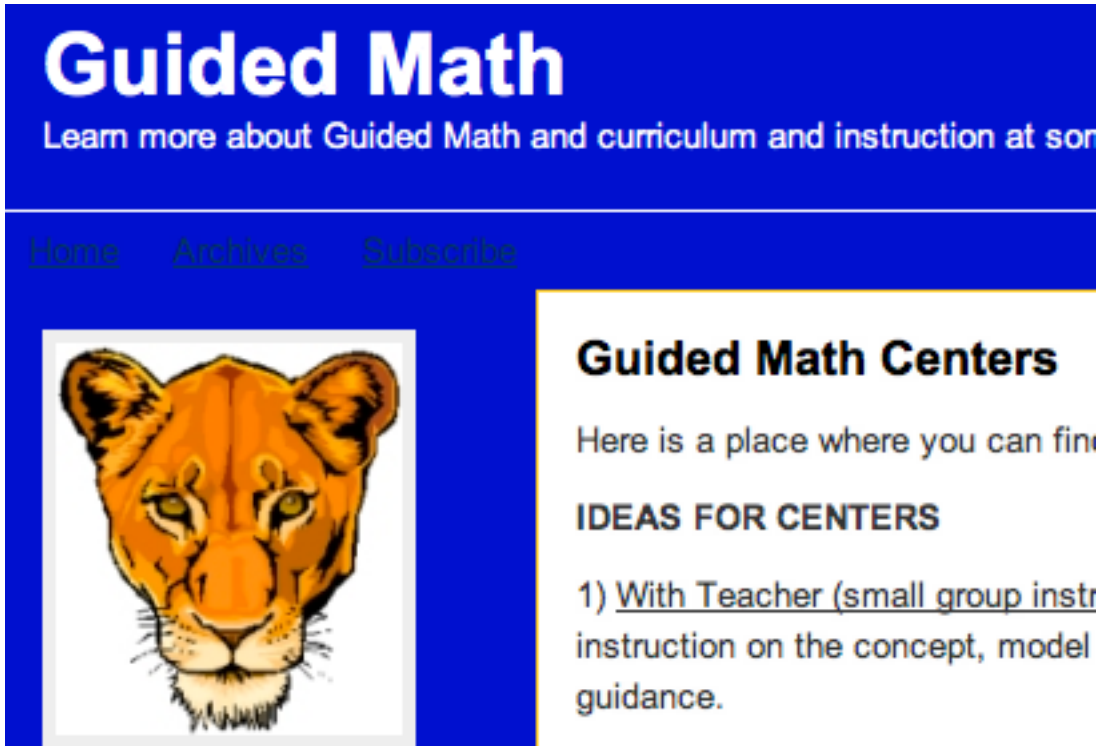
* http://ccssmath.org/
* Fantastic resource for finding standard specific resources to enhance your instruction and/or provide additional practice opportunities.

Xtra Math

* www.xtramath.org

Guided Math Site

* Planning Templates
* Examples
* Photos



Example Plan

* 1. Independent Work—just beyond their comfort level—may use peer support –would be differentiated by ability
* 2. Game Station—with games we have played before. Could even be vocabulary review games (self-checking)
* 3. Problem Solving Task—partners/small group task
* 4. Teacher Station—small, skill-based groups that are flexible within the topic (strugglers, on-level, above-level)

Parent Guides for CCSS

* USOE
  * http://schools.utah.gov/CURR/mathelem/Resources.aspx